Contribution of the forest sector to innovation, growth and jobs
Lena Ek, Chairman of Södra
2019-04-25
Sweden – a forest nation

Net export value
SEK 102 billion

World’s 2nd largest exporter of pulp, paper and sawn timber

22 % of Swedens industrial investments

The Swedish forest industry invested for just over SEK 15 billion 2018.

330,000 private small and midsize enterprises

The backbone of countryside Economy

The most common form of female enterprise

Average forestry income 10,000 €/yr

70,000 direct employed

Plus 30,000 full time contractors

Plus considerable multipliers within construction industry, transport, service, consulting etc.
Forest restoration in Sweden – 1900
Current situation
European forest history

• 70% of Europe was covered by forests in prehistoric times

• Intensified land use pushed back the forests, culminating around the time of the big emigration in mid 1800

• A large reforestation campaign was launched in Sweden around 1900

• Today 70% of Sweden is again covered by forests, and 39 % of EU-countries. Both forest area and the standing forest volume is increasing in the EU.

• Europe’s forests compensate for 12% of the emissions of green house gases. The potential is the double
The infrastructural backbone of sustainable forestry

- The Forest act of 1903
  - Regeneration becomes law

- The Swedish National Forest Inventory
  - Continuous monitoring forests since 1923

- The Forest act of 1993
  - Production and biodiversity of equal importance in forest management
  - Common values replace judicial details: Freedom and responsibility

The Swedish National Forest Inventory, at work since 1923.
Production and biodiversity - A success story from 1993

**Production**
- Increased forest inventory
- Increased growth
- Increased harvesting

**Biodiversity**
- Increase of old forests
- Increase of broadleaves
- Increase of dead wood

### Standing volume

![Standing volume graph with data from 1920 to 2010 showing an increasing trend.](#)

### Old forests, 1000 ha

![Old forests graph showing increase from 1985 to 2020 for different regions in Sweden.](#)
This is Södra

Sales
SEK 24 billion

Employees
3,100

Wood volume 16.5 million m³ sub

3 pulp mills and 7 sawmills

52,000 members
Sustainable development – the heart of our business, at the top of our agenda
Sustainability since 1938

- **1995**: Action Plan for Production and Conservation
- **1996**: Green Forest Management Plans
- **1997**: Green Accounts
- **1998**: Certified Forests
- **1999**: PEFC Established
- **2000**: Södra Joins PEFC
- **2001**: Certified Contractors
- **2002**: Training Campaign: Species Advisers
- **2003**: Training Campaign: Landscape Planning
- **2004**: Conservation After Major Storm
- **2005**: Training Campaign: White-tailed Eagle
- **2006**: Own Cert Scheme
- **2007**: Conservation After Major Storm - Again
- **2008**: Södra Joins FSC
- **2009**: Training Campaign: Conservation Management
- **2010**: Soil Preservation Guarantee Introduced
- **2011**: Training Campaign: Conservation of Water
- **2012**: Training Campaign: Forest Waters
- **2013**: Training Campaign: Conservation Classification
- **2014**: Blue and Green Forest Management Plans
- **2015**: Training Campaign: Conservation and Forest Residues
- **2016**: Training Campaign: Conservation and Forest Residues

Certification schemes:
- PEFC
- FSC
Three seedlings planted for each tree cut at final felling
Södra’s clearcuts have a mean area of 2.3 ha
Longterm target for each compartment

Four classes:
• PG – Production with general environmental consideration
• K – Combined targets (both production and environmental consideration)
• NS – Nature conservation requiring treatment
• NO – Nature conservation untouched.
The invaluable raw material from the forest

**Lignin products**
- Carbon fibre
- Vehicle fuels
- Adhesives and binders

**Bark**
- Specialty chemicals
- Food additives

**Hemi products**
- Oxygen barriers
- Birch sugar
- Plastics and chemicals

**Energy**
- District heat
- Electricity
- Fuel

**Lignin**
- 30%

**Cellulose**
- 45%

**Hemi cellulose**
- 25%

**Paper**
- Tissue
- Speciality paper
- Nappies and sanitary pads

**Textiles**
- Viscose
- Lyocell
- New processes

**Composites**
- Biocomposites
- Hybrid composites

**Bark**
- Specialty chemicals
- Food additives

**Hemi products**
- Oxygen barriers
- Birch sugar
- Plastics and chemicals

**Energy**
- District heat
- Electricity
- Fuel
The outside world needs drive innovation

More sustainable housing
More sustainable textiles
More sustainable packaging
More fossil-free fuels
Substitution

1 m³ tree

500 kilo CO₂

900 kilo CO₂

1 500 kilo CO₂

Satre & O’Connor 2010
One m$^3$ wood substitute metal constructions
1000-1500 kilo CO$_2$

It is possible to build tall wooden buildings
EU financed project FRESH

Biodegradable!
Renewable!
Same quality!
Global consumption of textiles

- Cotton: 30%
- Cellulose based textile: 7%
- Fossil based textile (Ex. polyester): 63%
Biofuels based on forest raw materials ➔ rest products

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<thead>
<tr>
<th>Company</th>
<th>Description</th>
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<tbody>
<tr>
<td>Sunpine</td>
<td>Produces biodiesel from tall oil residue from mill</td>
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<td>Purification of crude methanol</td>
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<tr>
<td>Silva Green Fuel</td>
<td>Södra invest to produce biomethanol residue from mill</td>
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<tr>
<td></td>
<td>Advanced technology for biofuels residue from mill</td>
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From seed to finish product and a positive electrical energy balance

- Wood raw material
- Biofuel
- Softwood sulphate pulp
- Hardwood sulphate pulp
- Dissolving pulp
- Sawn and planed timber, interior wood products
- Green electricity
- District heating
- Own industry

Wood supplies from members
- Harvesting contracted by Södra

Logistics: raw material and product

Planting/natural regeneration
- Site preparation
- Thinning
- Final harvesting
- Cleaning
A pulp mill is a biorefinery

- Pulp/dissolving
- District heat
- Green electricity
- Bark/bioenergy
- Pellets
- Talloil
- Methanol
- Green chemicals
15 sustainability targets including three equivalent to our financial targets

**Fossil-fuel free**
- Target: 0

**Rate of forest growth**
- Target: 20%

**Occupational injuries**
- Target: 0

Södra’s production will be fossil-free by 2020, and Södra’s transportation will be fossil-free by 2030.

By 2050, the annual rate of forest growth will be 20% higher than in 2015.

A zero accident vision and the lost time accident rate (LTAR) will decrease by 15% per year until 2020.
An average member estate offsets the CO₂ emissions of 40 Swedes – an area of 50 ha

Gross growth 380 m³fo

<table>
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<th>70</th>
<th>Annual timber inventory growth</th>
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<td>310</td>
<td>Annual harvesting</td>
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Corresponds to +100 tonnes CO₂

Substitution effect total climate-related benefits = 200 tonnes CO₂

Annual CO₂ emissions in Sweden are about 5 tonnes /person
Södra contributes to the UN Sustainable Development Goals
The forest is a renewable superpower and improves the climate in three main ways

Sweden is made up of 70 percent forest and we now have twice as much forest as we did 100 years ago.
The future is made of trees